EJERCICIOS RADICALES – RACIONALIZACIÓN **FICHA 1**

Racionaliza y simplifica:

a) $\frac{2}{\sqrt{3}}$

b) $\frac{1}{2\sqrt{2}}$

c) $\frac{5}{2\sqrt{5}}$

d) $\frac{2}{\sqrt{6}}$

e) $\frac{2}{\sqrt{5}-\sqrt{3}}$

f) $\frac{1}{1+\sqrt{2}}$

g) $\frac{3+\sqrt{2}}{\sqrt{2}}$

h) $\frac{\sqrt{2}}{3-\sqrt{2}}$

i) $\frac{2}{\sqrt[3]{3}}$

j) $\frac{3}{\sqrt[3]{3^2}}$

k) $\frac{3}{\sqrt[5]{2^3}}$

SOLUCIONES

a) $\frac{2}{\sqrt{3}} = \frac{2\cdot\sqrt{3}}{\sqrt{3}\cdot\sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{3^2}} = \frac{2\sqrt{3}}{3}$

b) $\frac{1}{2\sqrt{2}} = \frac{1\cdot\sqrt{2}}{2\sqrt{2}\cdot\sqrt{2}} = \frac{\sqrt{2}}{2\cdot 2} = \frac{\sqrt{2}}{4}$

c) $\frac{5}{2\sqrt{5}} = \frac{5\cdot\sqrt{5}}{2\sqrt{5}\cdot\sqrt{5}} = \frac{5\sqrt{5}}{2\cdot 5} = \frac{\sqrt{5}}{2}$

d) $\frac{2}{\sqrt{6}} = \frac{2\cdot\sqrt{6}}{\sqrt{6}\cdot\sqrt{6}} = \frac{2\sqrt{6}}{6} = \frac{\sqrt{6}}{3}$

e) $\frac{2}{\sqrt{5}-\sqrt{3}} = \frac{2(\sqrt{5}+\sqrt{3})}{(\sqrt{5}-\sqrt{3})(\sqrt{5}+\sqrt{3})} = \frac{2(\sqrt{5}+\sqrt{3})}{(\sqrt{5})^2-(\sqrt{3})^2} = \frac{2(\sqrt{5}+\sqrt{3})}{5-3} =$

$= \frac{2(\sqrt{5}+\sqrt{3})}{2} = \sqrt{5}+\sqrt{3}$

f) $\frac{1}{1+\sqrt{2}} = \frac{1-\sqrt{2}}{(1+\sqrt{2})(1-\sqrt{2})} = \frac{1-\sqrt{2}}{1^2-(\sqrt{2})^2} = \frac{1-\sqrt{2}}{1-2} = \frac{1-\sqrt{2}}{-1} = -1+\sqrt{2}$

g) $\frac{3+\sqrt{2}}{\sqrt{2}} = \frac{(3+\sqrt{2})\cdot\sqrt{2}}{\sqrt{2}\cdot\sqrt{2}} = \frac{3\sqrt{2}+\sqrt{2}\cdot\sqrt{2}}{\sqrt{2^2}} = \frac{3\sqrt{2}+2}{2}$

h) $\frac{\sqrt{2}}{3-\sqrt{2}} = \frac{\sqrt{2}(3+\sqrt{2})}{(3-\sqrt{2})(3+\sqrt{2})} = \frac{3\sqrt{2}+\sqrt{2}\cdot\sqrt{2}}{3^2-(\sqrt{2})^2} = \frac{3\sqrt{2}+2}{9-2} = \frac{3\sqrt{2}+2}{7}$

i) $\frac{2}{\sqrt[3]{3}} = \frac{2\cdot\sqrt[3]{3^2}}{\sqrt[3]{3}\cdot\sqrt[3]{3^2}} = \frac{2\sqrt[3]{3^2}}{\sqrt[3]{3^3}} = \frac{2\sqrt[3]{9}}{3}$

j) $\frac{3}{\sqrt[3]{3^2}} = \frac{3\cdot\sqrt[3]{3}}{\sqrt[3]{3^2}\cdot\sqrt[3]{3}} = \frac{3\sqrt[3]{3}}{\sqrt[3]{3^3}} = \frac{3\sqrt[3]{3}}{3} = \sqrt[3]{3}$

k) $\frac{3}{\sqrt[5]{2^3}} = \frac{3\cdot\sqrt[5]{2^2}}{\sqrt[5]{2^3}\cdot\sqrt[5]{2^2}} = \frac{3\sqrt[5]{2^3}}{\sqrt[5]{2^5}} = \frac{3\sqrt[5]{8}}{2}$